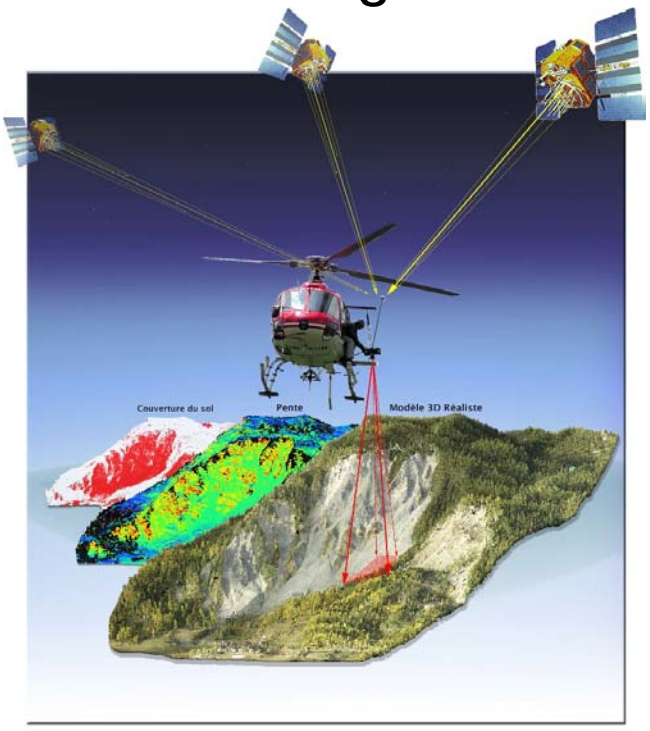
ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

SDUST 山东科技大学

Workshop on geomatics technology for the monitoring of natural hazards

Final Programme

23 – 27th August 2010



Lausanne, Switzerland

Jing Wu, Pierre-Yves Gilliéron, EPFL

1. Dates & location

Part I:
- Monday 23 August: room LITEP, GC C2 413
- Tuesday 24 August: room ISRF, GC D0 386

Part II:
- Wednesday 25 August: room LITEP, GC C2 413
- Thursday 26 August: visit of a natural hazards area
- Friday 27 August: EPFL

2. Objectives of the workshop

This seminar will be jointly organised by the two parties which already benefit from an agreement on co-operation in research and education. For the last three years, the two groups have regularly exchanged knowledge in the field of geodesy and geomatics engineering. This scientific partnership has been the driving force for the two parties to organise a scientific seminar based on a common research theme.

The principle objectives of this seminar are:

- to reinforce the research collaboration between the Geodetic Eng. Laboratory (TOPO) of the EPFL and the group of geomatics of the SUST.
- to exchange ideas and results related to the development of geo-monitoring systems.
- to evaluate the potential of transferring technologies in geomatics and environmental sciences.
- to establish an active collaboration based upon one or several aspects of geodata acquisition and analysis.
- to promote the exchange of ideas between students (Masters, PhD) through this branch of research.

Specifically, some more precise expectations and objectives are:

- to develop some common elements of the project such as calibration principles and methods of data processing.
- to discuss the principles of quality control.

This seminar must also be viewed as an encouragement for researchers to participate in an international academic exchange. Furthermore, it is the occasion to establish a common strategy for the scientific publication of innovative subjects in the field of geo-monitoring.

3. Importance of the seminar for future bilateral scientific co-operation

The organisation of such a seminar is a significant event for both parties as they will maintain a scientific relationship for many years. Moreover, both parties have expressed the intent to continue this partnership thanks to regular academic visits.

The meeting of the scientists of both parties and the sharing of their knowledge is fundamental for the continuing programme of co-operation between EPFL and SUST. This combined knowledge of the field will certainly assist in the definition of future common projects. Finally, this seminar will also facilitate and encourage the exchange of students as it is an excellent opportunity to share experiences and resources.

4. Expected scientific results from the seminar

Following this seminar, both parties will have exchanged the results of their research in the domain of geo-monitoring. A brief state of the art will be established in order to demonstrate the respective abilities of the two groups and to clearly identify some common research activities.

This seminar must serve as a channel in creating an exchange programme between researchers of the EPFL and SUST. The promotion of scientific exchanges in a foreign research institution is an important aspiration for both parties.

The results and the discussions of this seminar will be gathered and made available as proceedings (CD-ROM). A list of potential publications will also be established for scientific journals in order to increase the visibility of our research.

5. Preliminary programme of the workshop

Part I:

Monday 23 August – Session 1: Introduction to Geo-monitoring

Time	Topic	Who, Institute
8:45	Opening, welcome	Marc Parlange, Dean of ENAC
9:00	Geo-monitoring at EPFL	Bertrand Merminod, EPFL-TOPO
9:30	Geomatics research at SUST	JIN Fengxiang, SUST
10:00	Break	
10:30	Geodetic engineering for geology in Switzerland	Aurèle Parriaux, EPFL- GEOLEP
11:00	"863" National Research Project: Precise Monitoring of Geological Disaster and Biological environment by Remote-sensing in Mining Area	JIN Fengxiang, SUST
11:30	*Discussion*	

Lunch

Monday 23 August – Session 2: Data acquisition techniques

Time	Topic	Who, Institute
14:00	Airborne LIDAR & Mapping	Jan Skaloud, EPFL-TOPO
14:30	Subsidence Monitoring of Coal Mining Area based on D-InSAR/PS InSAR	LIU Guolin, SUST
15:00	The deep city China Project	LI Huanqing, EPFL-GEOLEP
15:30	break	
16:00	Development of Field Inspection System on Geological Disaster and Biological Environment	JIANG Tao, SUST
16:30	*Discussion*	

20:00: Dinner

Tuesday 24 August – Session 3: Monitoring, data analysis and modelling (part 1)

Time	Topic	Who, Institute
8:30	Mining Geological Disaster Monitoring Methods and Formation Analysis	WANG Qianjun, CAS-
9:00	Deformation monitoring via terrestrial LIDAR	WU Jing, EPFL-TOPO

9:30	GPS monitoring: network infrastructure (e.g. AGNES)	Pierre-Yves Gilliéron, EPFL-TOPO
10:00	Break	
10:30	3D representation of point clouds	Yannick Stebler, EPFL-TOPO
11:00	Environmental monitoring for landscape genomics	Stéphane Joost, EPFL-LASIG
11:30	*Discussion*	

Tuesday 24 August – Session 4: Monitoring, data analysis and modelling (part 2)

Time	Topic	Who, Institute
14:00	Feature extraction in geology and forestry	Michael Kalbermatten, EPFL-LASIG
14:30	Development of Geological Disaster Analysing and Warning System for Mining Area	JI Min, SUST
15:00	Towards intelligent sensor networks for environmental monitoring	Alex Bahr, Chris Evans, EPFL-DISAL
15:30	break	
16:00	Water Quality Remote Sensing Based on Hyperion and HJ-1 SHI Data in Mining Area	SUN Lin, SUST
16:30	*Discussion*	

Part II:

Wednesday 25 August – Session 5: Synthesis and research prospects

Time	Topic	Who, Institute
10:00	Synthesis	EPFL/SUST
10:30	Future research activities and research prospects	EPFL/SUST
11:30	*Discussion*	

Lunch

Wednesday 25 August - EPFL Visit

Thursday 26 August – Visit of a natural hazard area

Time	Topic	Who, Institute
10:00	Departure	
11:00	Visit area 1 (to be determined)	EPFL/SUST
12:00	*Lunch*	
14:00	Visit area 2 (to be determined)	EPFL/SUST

Friday 27 August – Future co-operation SUST- EPFL/TOPO

Time	Topic	Who, Institute
10:00	Discussion on future co-operation - identification of research prospects - junior and senior mobility programme - joint publications	EPFL/SUST
12:00	*Lunch*	
14:00	Discussion on future co-operation	EPFL/SUST
16:00	Closure	

Notes: Part I is open to ENAC and all partners; part II is open to EPFL-TOPO and SUST delegates.

Participants

Swiss Participants

Marc Parlange, ENAC, EPFL (to be confirmed)
Bertrand Merminod, TOPO, EPFL
Jan Skaloud, TOPO, EPFL
Pierre-Yves GILLIERON, TOPO, EPFL
Wu Jing, PhD Student, TOPO, EPFL
Yannick Stebler, PhD Student, TOPO, EPFL
Stéphane Joost, LASIG, EPFL
Michael Kalbermatten, LASIG, EPFL
Aurèle Parriaux, GEOLEP, EPFL
Li Huanqing, PhD student, GEOLEP; EPFL
Alex Bahr, Chris Evans, DISAL, EPFL

Chinese Participants

JIN Fengxiang, Group of Geomatics, SUST
LIU Guolin, SUST
WANG Qianjun, Chinese Academy of Sciences
JI Min, SUST
JIANG Tao, SUST
SUN Lin, SUST